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The Motor Activity Status and Students` Self-Assessment of Health During a COVID-19 Pandemic

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Abstract

In the context of distance learning, physical activity and social contacts of students decreased to minimum The aim of the research was to determine the self-assessment of health and well-being, physical activity status and behavioral aspect of a healthy lifestyle of PE students during quarantine, as well as to determine whether these indicators depend on place of students` education. The research involved 226 students (139 male and 87 famale subjects average age – 19.7 years), receiving a Pedagogical Specialty in Physical Education at the Bachelor's level of higher education. Independent samples included 77 students from a University in Ukraine; 74 – from Poland; 75 – from Italy. The study was conducted online in October-November 2020, during the period of quarantine in these countries. System analysis, questionnaire survey, survey analysis and descriptive statistics were used. The e-questionnaire included a set of methods: Health Self-Assessment Questionnaire (HSAQ), Health Attitude Index (HAI), Lifestyle Survey (LS) Leisure-Time Self-Assessment Questionnaire during quarantine (LTSAQ). It has been established that 23.4% of Ukrainian students have a tendency to be careless about their health. The majority of all students (Ukrainian – over 70%, Polish and Italian – over 90%) have adequate self-assessment of their own health. A high level of health-forming behavior dominate in all three groups. Italian students were not completely satisfied with their own physical activity during the quarantine. Most of the students in all samples exercised individually 3 times a week or more often. The dominant motives to excercises ere increasing physical fitness or improving the stature.

Keywords: *quarantine, questionnaires, health, motor activity, students*

Introduction

A new challenge for modern society is the COVID-19 pandemic, the scale and severity of which reach the level of threat to the health of the world's population. An unprecedented phenomenon of voluntary social isolation has emerged as a way to effective fighting for the spread of the coronavirus. In such conditions, the life of each person undergoes the significant transformations that affectthe health status (social isolation, prolonged stay indoors, forced decreasing physical activity level).

Students` youth is one of the most active strata of society. Motor activity is an important tool for them to prevent not only physical but also mental disorders, in particular, helps to withstand emotional overload, which is especially relevant today (Azhyppo et al., 2018; Mariam & Mazin, 2019; Tsos, Berhier, & Sabirov, 2015). Undoubtedly, COVID-19 became a challenge for the educational process organization, which moved to a remote learning environment. In the context of distance education, students` physical activity and social contacts have decreased to minimum. This state of affairs causes detraining of various body systems, which causes a decrease disease resistance and physical capacity deterioration in general (Bielikova et al., 2020; Kastrati, & Georgiev, 2020). At the same time, higher education quality is equated with the train-

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ing quality of of able-bodied specialists, which is ensured by the proper state of their health. Therefore, an important condition for the normal physical and spiritual development of the student's personality are certain guidelines for a responsible attitude to their health. These guidelines are a motivational stimulus for the optimization of motor activity through regular independent exercises, provided the student's self-organization. Our research is actualized by these factors.

The main purpose of the study was to determine the self-assessment of health and well-being, motor activity status and behavioral aspects of a healthy lifestyle of students during the quarantine period, as well as to determine whether these indicators differ in terms of students` study location (higher education institutions of Ukraine, Poland and Italy).

Methods

The research involved the convenience sampling of 226 students (139 male and 87 female subjects) majoring the Pedagogy specialty in Bachelor's degree. Independent samples included 77 students of Lesya Ukrainka Volyn National University, Ukraine (educational program on Secondary Education. Physical Culture) – group 1 (G1); 74 students of the Jan Dlugosz University in Czestochowa, Poland (Physical Education) – Group 2 (G2); 75 students of the University of Naples "Parthenope", Italy (educational program on Sciences on Physical Exercises) – group 3 (G3). The average age of students was 19.7±1.1 years. The study was conducted online in October-November 2020, during the period of quarantine restrictions on the COVID-19 pandemic in these countries, under the conditions of students' distance education. The study was performed in compliance with the basic provisions of the GCP (1996), the Council of Europe Convention on Human Rights and Biomedicine (04.04.1997), the World Medical Association Declaration of Helsinki on Ethical Principles for Medical Research Involving Human Subjects (1964-2013). Voluntary consent for participation in the research was received from all participants, providing fully anonymity of the respondents.

The following research methods as systematic analysis, questionnaire survey, survey analysis and mathematical statistics were used to obtain the necessary data on the motor activity status and students` health self-assessment during the pandemic. An electronic questionnaire included a set of question techniques: HSAQ (Ware, Wright, & Snyder, 1974); HAI (Vachkov & Deriabo, 2004); LS (Rozhnov, 2006); LTSAQ), administered by the researchers.

The HSAQ was used to examine students' health and well-being according to their self-assessment. The questionnaire included 24 statements that respondents rated on a 5-point Likert scale: Strongly agree; Probably agree; Neither agree nor disagree; Probably not; Strongly disagree. The total score ranged of 24 to 120. The questionnaireor rate of well-being for persons who do not suffer from severe chronic diseases did not exceed 69 points.

HAI was used to identify the level and characteristics of students' attitude toward their health and healthy lifestyles. It makes possible to calculate a degree of health attitude components manifestation under the scales: emotional, cognitive, practical and scale of actions. The Intensity Index is formed by summing the scores on four scales demonstrating the general attitude to health and power of its manifistation. The maximum value on each scale for this test is 18 points. The methodology allows to calculate the general level of students' attitude to their health. In total, according to the test, it is 72 points.

To study the level of students` health-forming activity during the pandemic, the LS Methodology was used forassessing the behavioral, ie conscious, component in the formation of a healthy lifestyle. The methodology included 11 statements that reflected healthy actions. The scale for their evaluation included list of answer options – "constantly", "often", "sometimes", "never". The total score less than 20 points corresponded to a low (deviant) level of health-forming activitiy, from 21 to 29 points – average (adaptive) level, above 29 points – a high level of health-forming activity, which corresponded to the creative self-realization of the respondent in the health culture behavioral aspect.

LTSAQ allowed to investigate the students` motor activityfeatures uder the quarantine restrictions. It included 5 statements with closed answer options, from which students chose the most optimal option for them.

The results of the electronic questionnaire were processed using quantitative and qualitative methods of descriptive statistics using OpenOffice Calc. The arithmetic mean, the standard deviation (SD), the variable were calculated.

Results

The research results of the self-assessment of students`health and well-being revealed (Table 1) a significant number of students having the average level of health self-assessment, indicating on an adequacy. The normalwell-being was recorded at 71.4% of G1 students, 94.6% of G2 and 90.7% of G3. Students with a low level self-assessment (such in G1 – 23.4%, in G2 – 5.4%, in G3 – 9.3%) characterized by a tendency to careless attitude to their health, which is typical for

Table 1. HAS and SHFB during a pandemic (G1, n=77; G2, n=74; G3, n=75)

Methodology	Groups	Levels		
		High (%)	Medium (%)	Low (%)
HSA	G1	5.2	71.4	23.4
	G2	0	94.6	5.4
	G3	0	90.7	9.3
HAI	G1	28.6	64.9	6.5
	G2	12.2	70.3	17.5
	G3	22.7	77.3	0
LS	G1	94.8	5.2	0
	G2	97.3	2.7	0
	G3	81.3	12.0	6.7

young age. Such students are the most vulnerable to the negative impact of environmental, demographic, social and other factors. The high level of self-assessment, which was found at only 5.2% of G1 students, indicates an increased level of health anxiety; various painful or unpleasant sensation presence; pessimism about the improving their health in the future.

The distribution of the students by levels of their health and healthy lifestyle attitude (Table 1) suggested the highest number of students with an average level in all groups. Students with a high level in G1 – 28.6%, in G2 – 12.2% and in G3 – 22.7%, which indicated that these respondents had a highly formed, "good" attitude to their health and healthy lifestyle. The least number of students with low level was found accordingly – 6.5% in G1 and 17.5% in G2. These results indicated that these respondents hada bad attitude to health, they were in the "risk zone. In this case, there is a high probability not leading a completely healthy lifestyle.

Regarding the results of assessing the students` health-forming behavior (SHFB) during the pandemic (LS), high indices were found in all three students groups, which indicatedtheir creative self-realization in the behavioral health culture aspect. The average (adaptive level) of health-forming activity was established only in 5.2% of G1 students, 2.7% – G2 and 12.0% – G3. In G1 and G2 there were no respondents with a low (deviant) level of health-forming activity. Only 6.7% of such students were in G3.

According to the HAI Methodology, the severity degree of health attitude components under the scales was determined (Table 2). The results obtained in the studied samples under an emotional scale indicated the dominance in all groups an upper limit of the severity average level of this indicator. Its high level indicates that the surveyed is able to enjoy their health, get aesthetic pleasure of a healthy status, free from negative emotional stereotypes that exist in society accordingly a healthy lifestyle. A low level indicates that a person's attitude to health is mental in nature, has a little effect on the emotion, and caring for the health is simply a necessity.

Table 2. Expressiveness of students' attitude to their health (points), p=0.05

Scale type	Group 1 (n=77)			Group 2 (n=74)			Group 3 (n=75)		
	Mean±SD	Max	Min	Mean±SD	Max	Min	Mean±SD	Max	Min
Emotional Scale	11.39±1.09	18	0	12.26±2.1	18	6	10.56±1.11	15	3
Cognitive Scale	8.78±0.84	18	0	7.15±1.23	12	0	9.12±1.82	18	0
Practical Scale	12.55±1.20	18	0	12.85±2.20	18	3	12.72±2.54	18	3
Scale of Actions	8.01±0.77	18	0	6.06±1.04	12	0	8.52±1.7	9	0
General Health Care Intensity	40.73±3.90	66	3	37.94±6.5	54	21	37.72±7.54	51	24

The cognitive component (cognitive scale) characterized the understanding of the value of health, knowledge of the main factors that had a negative or positive impact on human health. According to this indicator, slightly lower values in all groups have been obtained, but also all of them are corresponded to the average level. The high level of the cognitive component development indicated a great interest of the respondent. The low level indicated that the respondent's attitude to health had a little effect on the cognitive area.

The practical component analysis makes it possible to determine a person's attitude to health and a healthy lifestyle in practice. Slightly higher results on this indicator in all groups evidence the readiness of students to engage in practical activities taking care of their health. The high level under this component indicates that the respondent tends to attend various sports sections, do special exercises, engage in health procedures, lead a healthy lifestyle in general. A low level evidences that a person is ready to engage something in the practical activities of caring for their health, which are organized by other people.

The active component (scale of actions) determines the extent to which a person's attitude to health, a healthy lifestyle in the field of actions. The lowest indicators under this scale in the three groups evidence that students are not able to change their health attitude. The high level of this component suggests that the test subject is actively seeking to change their environment: trying to lead a healthy lifestyle, in general, creates a healthy environment. A low level indicates that the test subject`s attitude to the health remains a "personal issue" without seeking to change the environment.

The general scale indicates a holistic formation of a conscious attitude to health. In total, the student`s maximum score is 72 points. In our case, the average test indicators in all three groups generally evidence that respondents have a well-developed "good" attitude towards a healthy lifestyle.

The results of the students` survey on the level of daily activity during the quarantine period differed depending on the respondents` place of residence. It was noted that 40.26% of G1 students and 22.97% of G2 were completely satisfied with their own motor activity under quarantine conditions. No such students were found in G3. In G1 there were no dissatisfied with their own motor activity, such answer was given by 20.27% of G2 respondents, 46.66% of G3 students.

G1 respondents (45.45%) and only 9.46% of G2 estimated their leisure time under the quarantine as "mostly physically active" (no such students were found in G3). G1 students (14.29%), 45.95% of G2 respondents and 77.33% of G3 believed that their leisure time was "more physically passive than active". Low imdicators were found under assessing leisure as "mostly passive". Thus, such G1 students are only 5.19%, they are not detected in G2 at all and in G3 – 4.0% of respondents.

It is important in the current period to individually perform physical exercises during a long-term self-isolation. To the question "How often did you exercise individually at least 30 minutes during the quarantine?" The answers were distributed as follows (Figure 1): only 9.09% of students in G1 2-3 times a day exercised, 12.16% of students – in G2 and respondents in G3 did not exercise. Once a week, 24.68% of students in G1, 22.97% in G2 and 8.0% in G3 individually exercised. The most number of students exercised three times a week or more: 48.5% in G1, 35.15% in G2, 66.67% in G3. Almost the same minor number of students in all groups exercised 1-2 times a week or less. Only 3.9% of G1 students exercised individuallyat all.

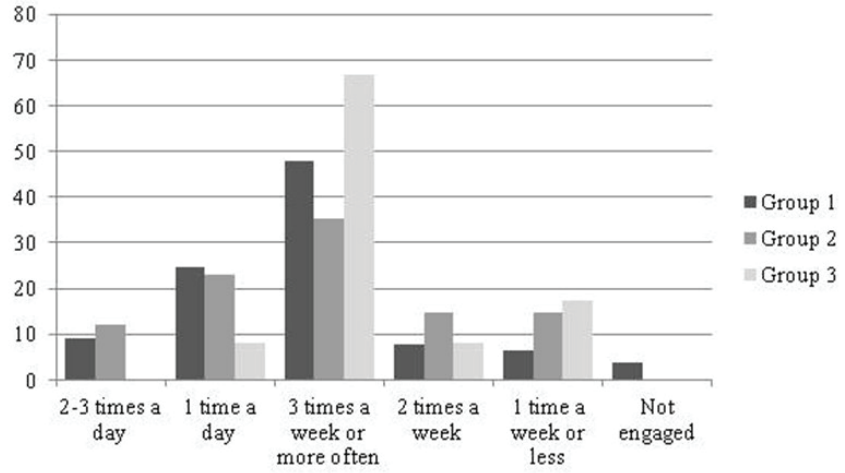

FIGURE 1. Frequency of individual exercising during the quarantine (%)

As the purpose of individual physical exercises, students named different motivators (Figure 2). The moststudents of G1 (49.35%) and G2 (52.7%) chose answer "to improve physical status"; such answer was chosen by only 20.0% of G3 respondents. Only 20.78% of G1 students and 12.16% of G2 students were interested in high sports results; nobody in G3 interested at all. 37.67% of G1 students, 20.27% of G2 respondents and 32.0% of G3 were involved with a purpose of improving their health. In order to normalize body weight, 25.97% of G1 were engaged, 17.57 of G2, and the most – 44.0% of G3 respondents. Similar results were found in the distribution of answers "for the purpose of improving the stature". Only 15.58% and 14.86% of G1 and G2 students iexercised individually with enjoyment of motor activity, respectively, and 48.0% of G3 respondents.

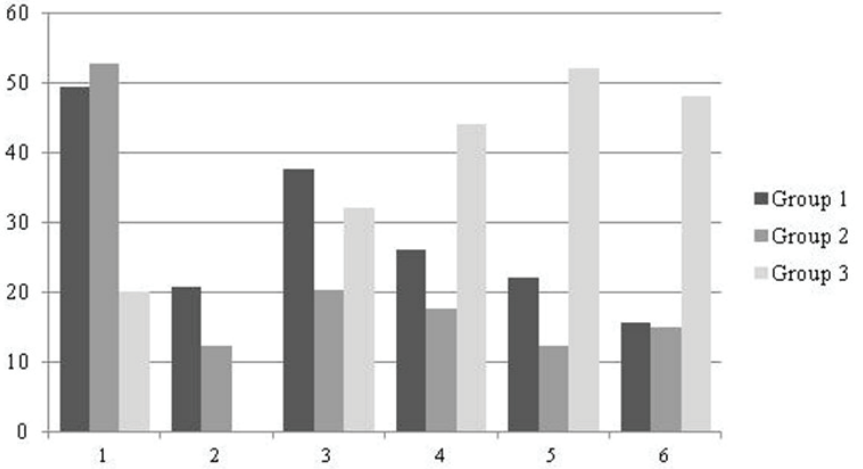

FIGURE 2. The purpose of exercising during the quarantine (%). 1 – To increase physical fitness; 2 – To achieve high sports result; 3 – To improve the health; 4 – To normalize body weight; 5 – To improve the stature; 6 – To enjoy motor activity.

In conditions when it is forbidden to attend sports clubs and it is impossible to practice personally with a coach, digital home training programs helped students to increase motor activity in self-isolation. The students have been polled about Facebook, YouTube and other sports home training programs usage. The answer "yes" was given by 36.36% of G1 students, 29.73% of G2 respondents and 65.33% of G3 students. Only 20.78% of G1 students and 20.27% respectively answered "no". 42.86% of G1, 50.0% of G2 and 34.67% of G3 partially used programs for home training.

Discussion

The COVID-19 pandemic has led to significant changes in education during 2020. The vast majority of countries have closed all educational institutions for at least some time, moving to the educational services provision remotely. The students became the most vulnerable part (Rogowska et al., 2020), thus COVID-19 has made significant adjustments and has become a test of discipline, clarity and timeliness of feedback from key actors of the educational process. According to the research results of the COVID-19 effects on the mental health of college students in the USA (Son, Hegde, Smith, Wang, & Sasangohar, 2020), 71% of respondents reported increased stress and anxiety due to a outbreak of the coronavirus.

The main forms of students` motor activity in conditions of prolonged hypokinesia were individual physical exercises. In this sense, it is interesting to study the impact of specialized education and the level of physical activity on the quality of life of Polish students (Posadzki, Musonda, Debska, & Polczyk, 2009). It was found that students of the Faculties of Physical Culture, Physiotherapy, Tourism and Recreation had not only a good health, but also a high quality of life, as well as higher resistance to stress and depression associated with significant mental load, compared with students of Polish or English

Philology Faculties. The results of such research demonstrated a clear relationship not only between physical but also mental health and physical activity. Students of Physical Education and Health Specialities study the basic principles of improving the quality of life according to their academic programs, and this contributes to a deep understanding of the impact of lifestyle and physical activity on the health and well-being level.

Our research involved students receiving pedagogical qualifications on Physical Education in higher education institutions of different countries (Ukraine, Poland and Italy). This allowed to identify common features and differences in the obtained results for students of different nationalities. These results evidenced that the entire sample, despite receiving a future physical education specialization, did not always manifest a sufficiently constructive attitude to their health during the pandemic and self-isolation. In particular, the fact that 23.4% of Ukrainian students have a tendency to be careless about their health, believing that they have sufficient physiological resources, is alarming. However, the majority of all students (Ukrainian – more than 70%, Polish and Italian – more than 90%) have adequate self-esteem, despite the public panic about it. Most of the students in the Ukrainian (over 1/4) and Italian (about 1/4) samples have a highly formed, "good" attitude to their health. According to this indicator, the low level (about 1/5 of students) in the Polish sample is somewhat alarming. The assessment of students' health-forming behavior (SHFB) is quite optimistic: a high level dominated in all three groups. Only five Italian students with low (deviant) health education were identified. The analysis of the components intensity degree of the attitude to health revealed that the highest averages dominate in all samples under the "practical scale", and the lowest – under the "scale of actions". These results indicated an increased willingness of students to engage in various practical activities aimed at caring for their health. However, they are reluctant to change their environment in accordance with their existing attitudes toward health.

The most important formative influence on students` health and healthy lifestylehas a behavioral (conscious) aspect of purposeful health-forming behavior. Italian students` self-criticism was manifested in the fact that in this sample there were no respondents who were completely satisfied with their own physical activity during the quarantine. On the contrary, the situation among Ukrainian students was even and the distribution of answers among Polish students was equable. The most of students in all samples exercised individually 3 times a week or more often. The dominant motives of the physical activity were: for Ukrainian and Polish students – increasing physical fitness, for Italian – improving stature. Italian students used home training programs from various information resources the most; 1/5 of Ukrainian and Polish students did not use them at all.

The results of the reseach evidenced some differences of indicators depending on the student`s nationality, which obviously reflected the socio-cultural peculiarities, mentality and characteristics of the national education systems of each country. We suppose that distance learning classes promotes good health and motivates a healthy lifestyle, for student`s consciously self-organize and a purposeful health-forming behavior.

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Conflict of Interest
The authors declare that there are no conflicts of interest.

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